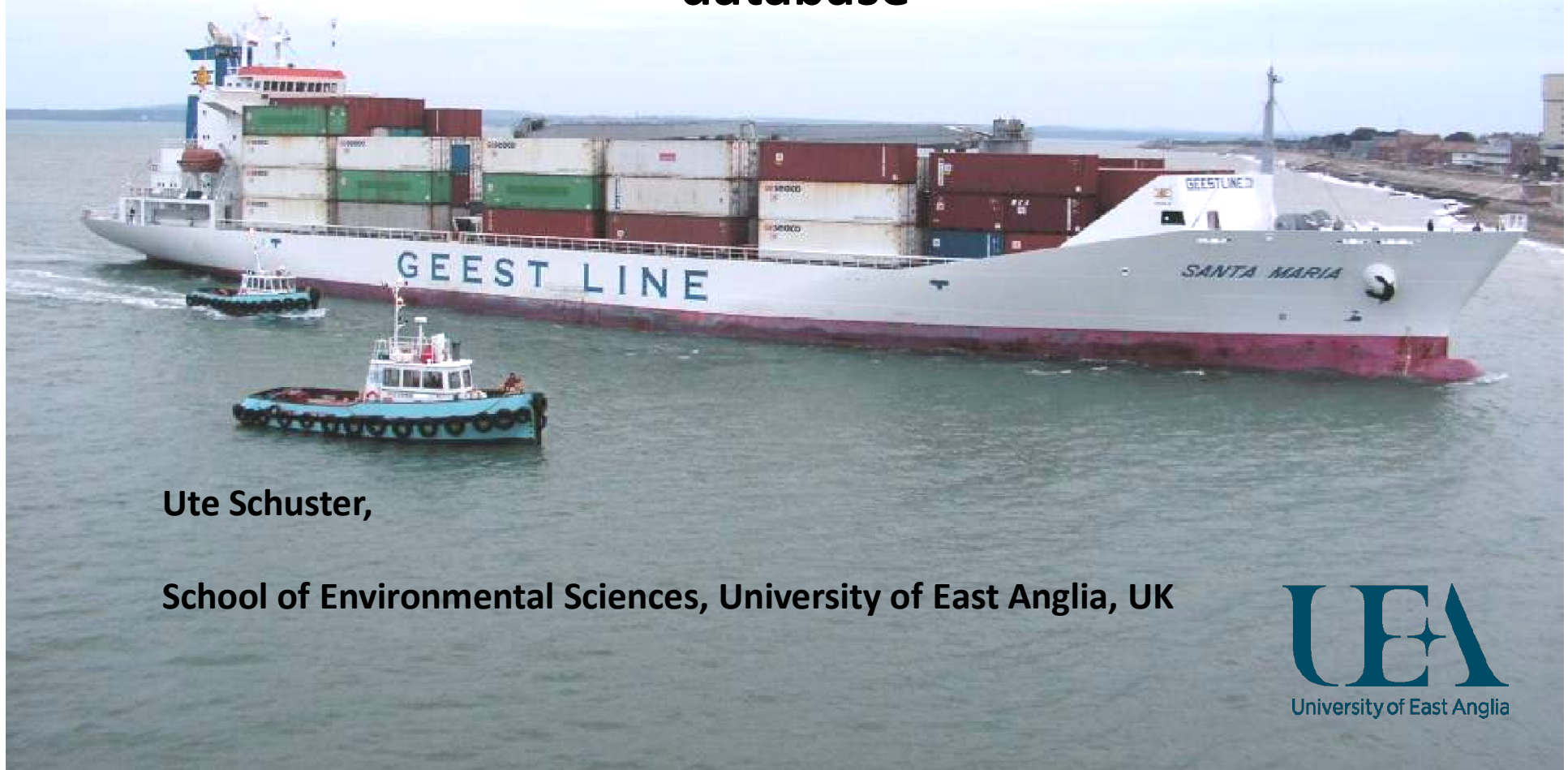


Interannual and decadal variability of surface $p\text{CO}_2$ in the North Atlantic data from the UK to Caribbean line and the wider SOCAT database



Ute Schuster,

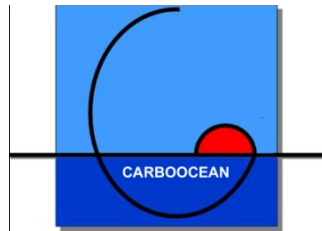
School of Environmental Sciences, University of East Anglia, UK



Timeline of EU funding

IMCORP: 1996 to 2000

CAVASSOO: 2001 to 2003



CarboOcean: 2005 to 2009



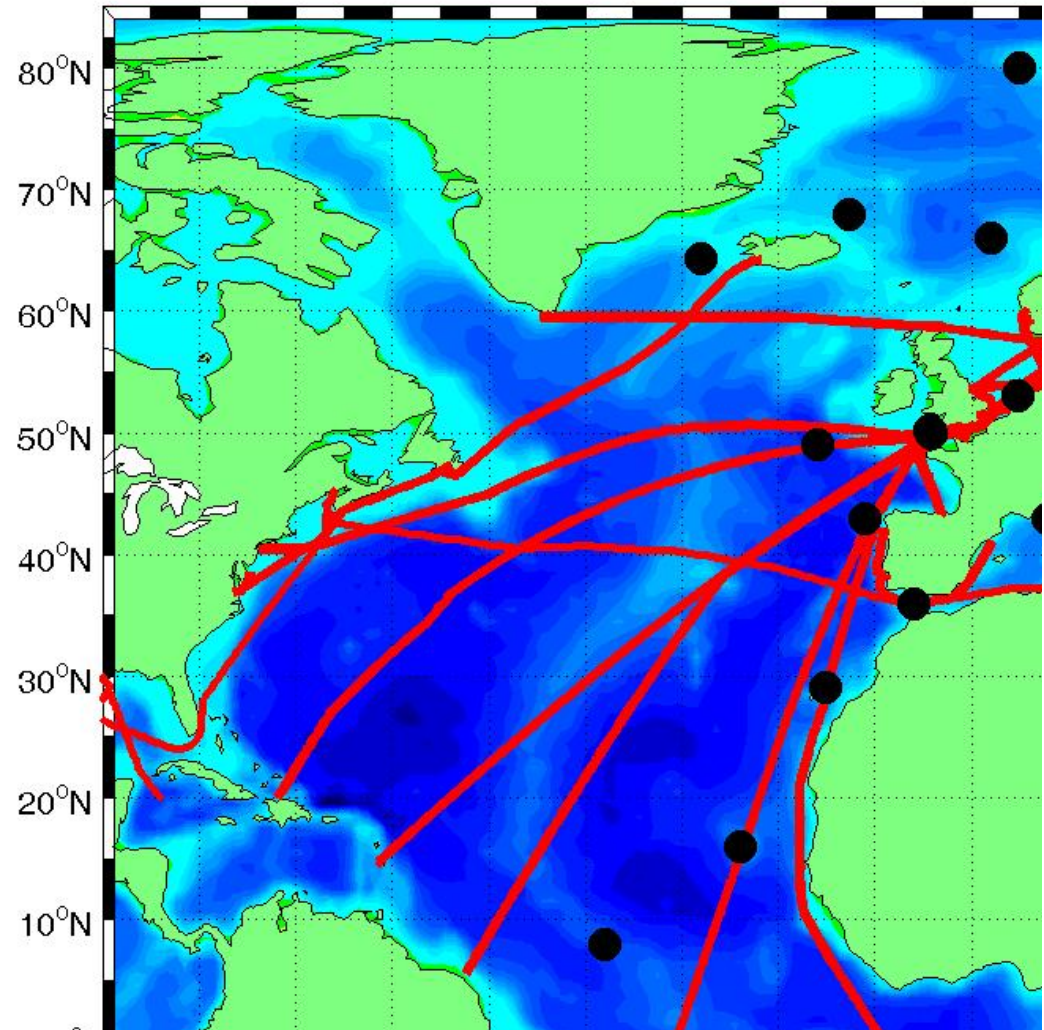
CarboChange: 2011 to 2015



Integrated Carbon Observation System

European-wide,

terrestrial, atmospheric, and marine



RECCAP:

REgional Carbon Cycle Assessment Project

Final product:

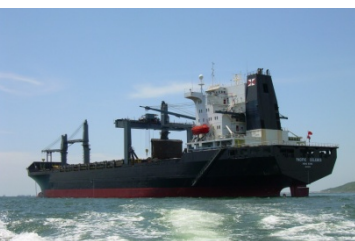
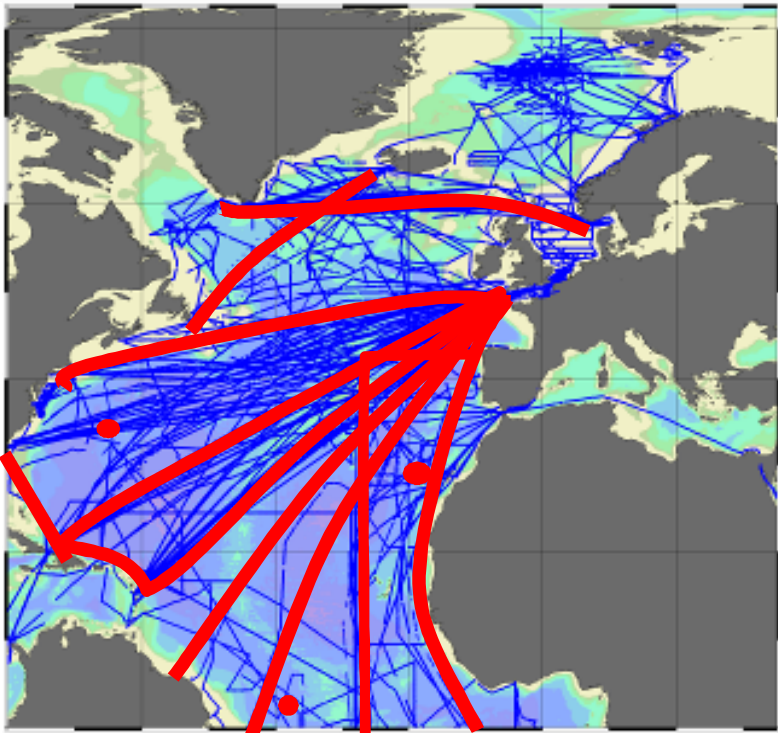
Best estimate of global sources/sinks of atmospheric CO₂ 1990 to 2009

Process:

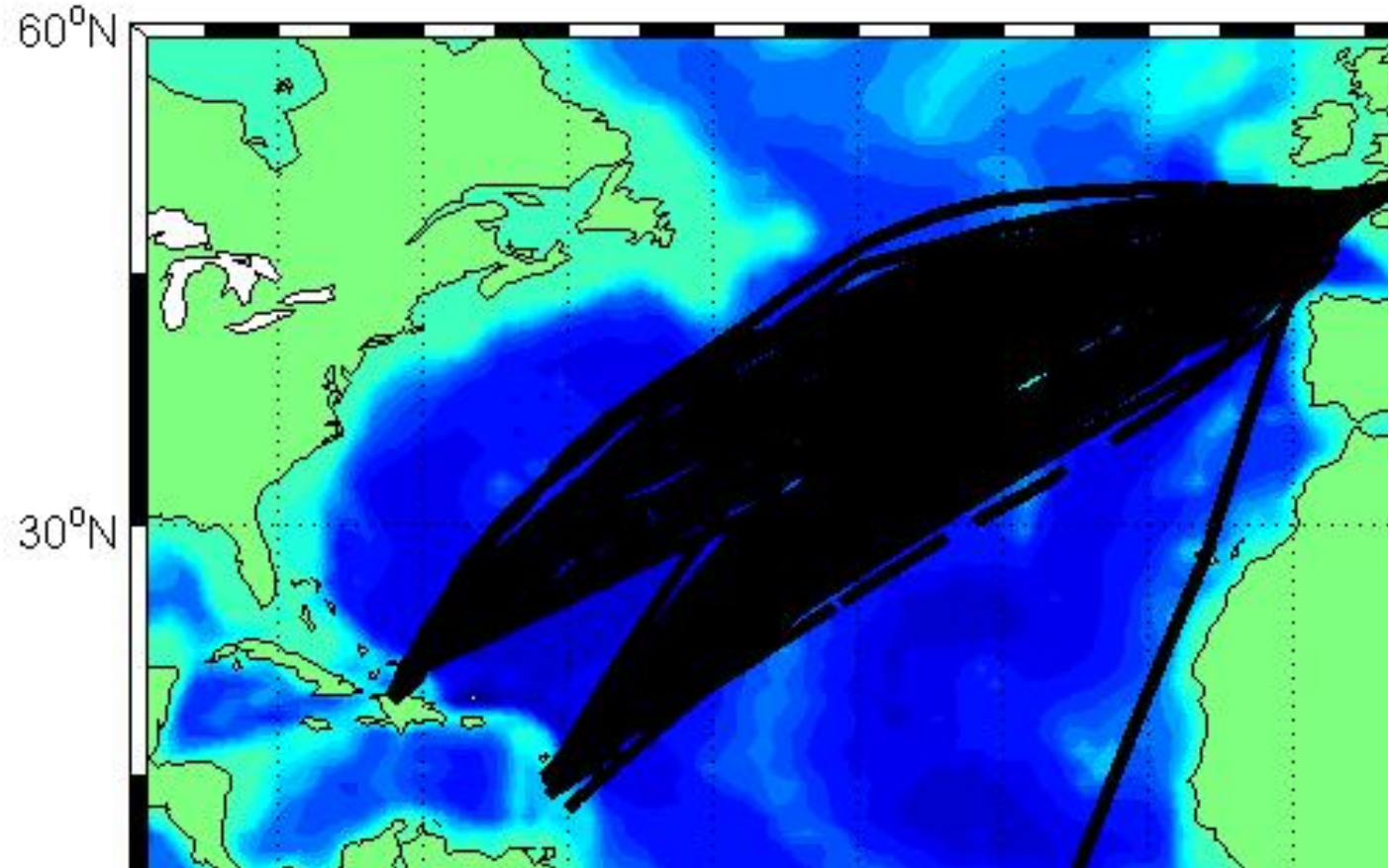
Best estimate of regional sink of atmospheric CO₂, including land and oceans

Schuster et al paper on the air-sea flux of CO₂ in the Atlantic and Arctic

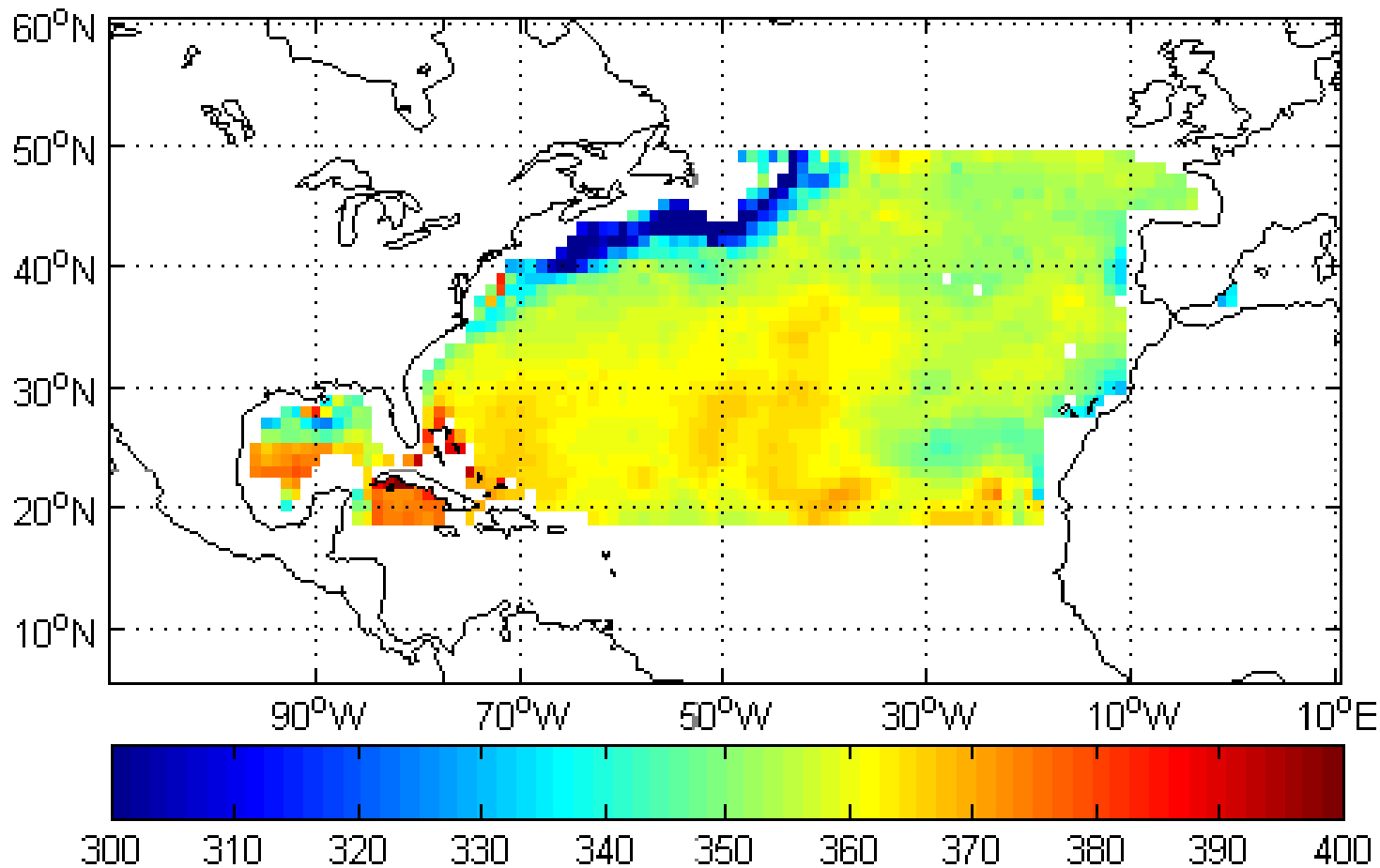
The North Atlantic carbon observing system



MV Santa Lucia, 2001-2002
MV Santa Maria, 2002-2007
MV Benguela Stream, 2008 -

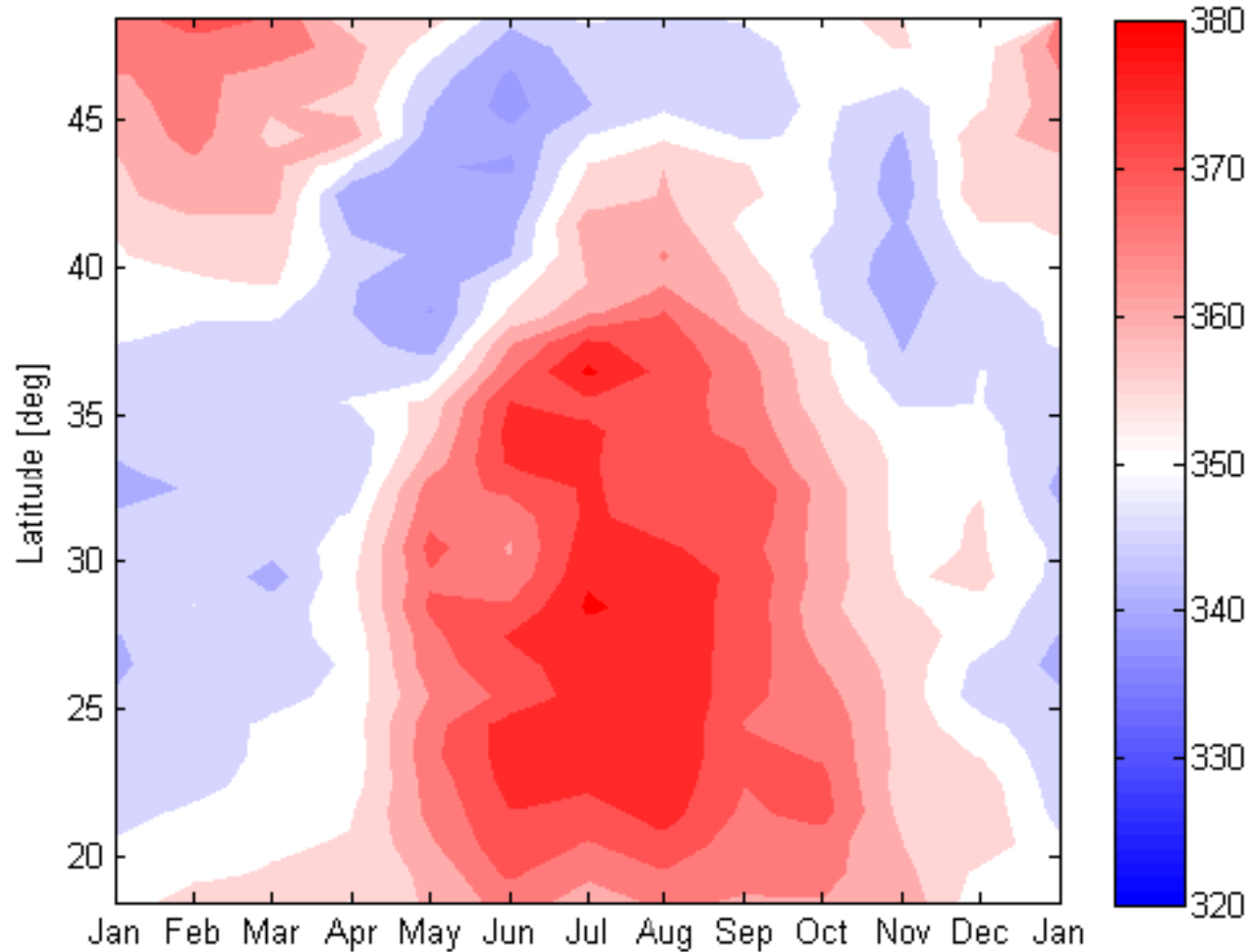


Annual mean surface pCO₂ in the mid-latitude North Atlantic



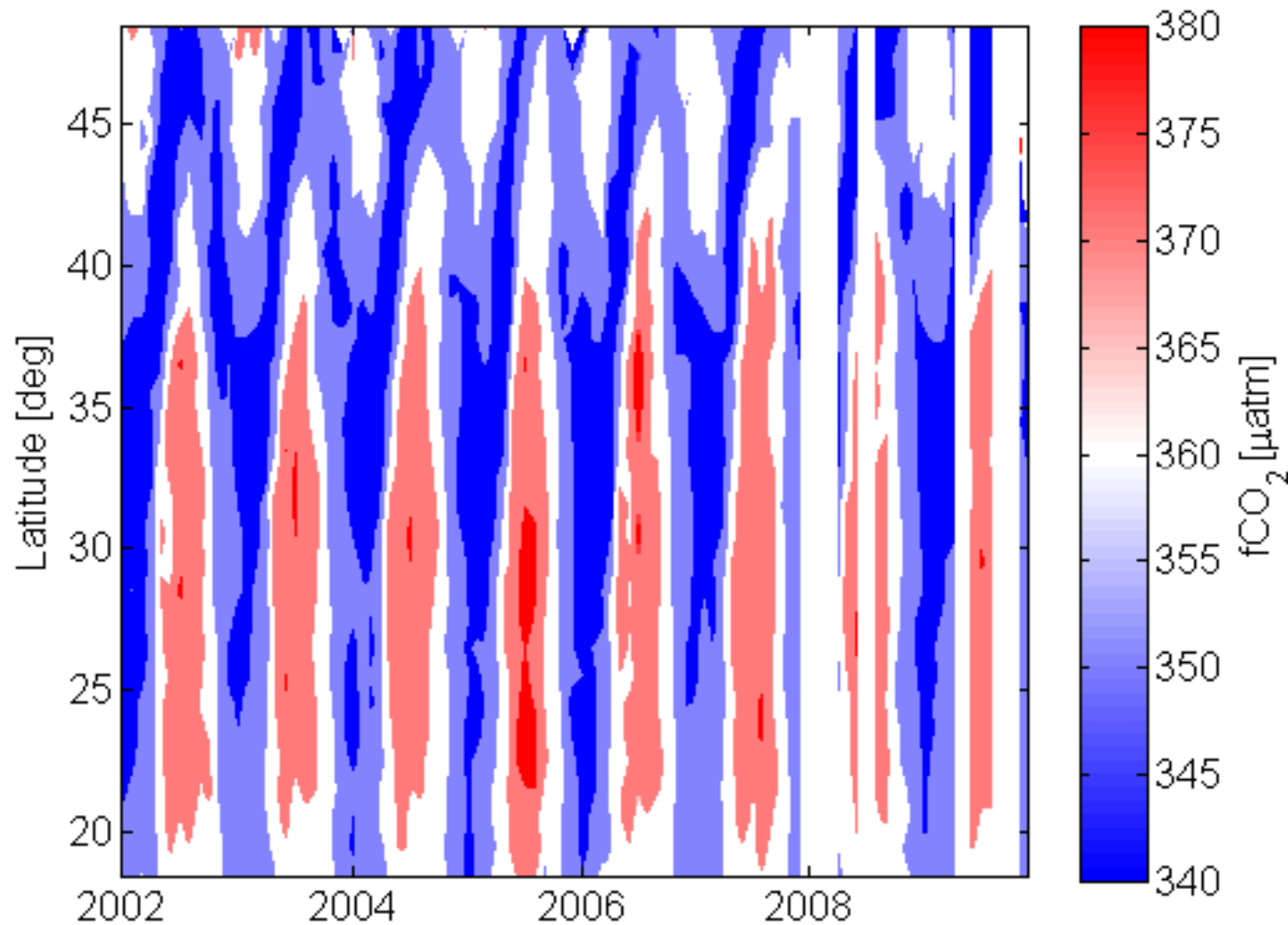
Schuster and Landschützer (2011) in preparation

The seasonal cycle of surface pCO₂ in the mid-latitude North Atlantic



Schuster and Landschützer (2011) in preparation

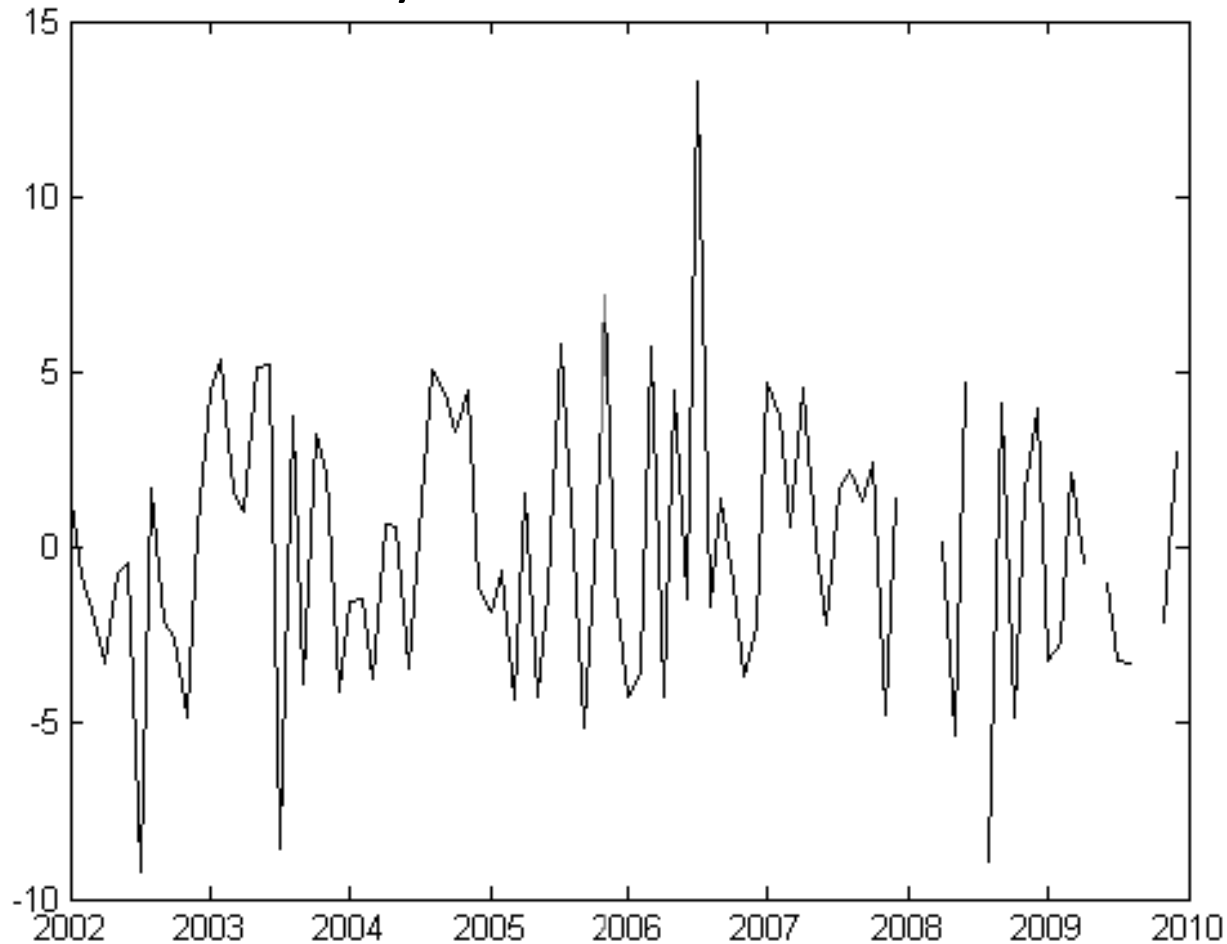
Seasonal cycle versus latitude in the mid-latitude North Atlantic



Schuster and Landschützer (2011) in preparation

Interannual variability in surface pCO₂ in the mid-latitude North Atlantic

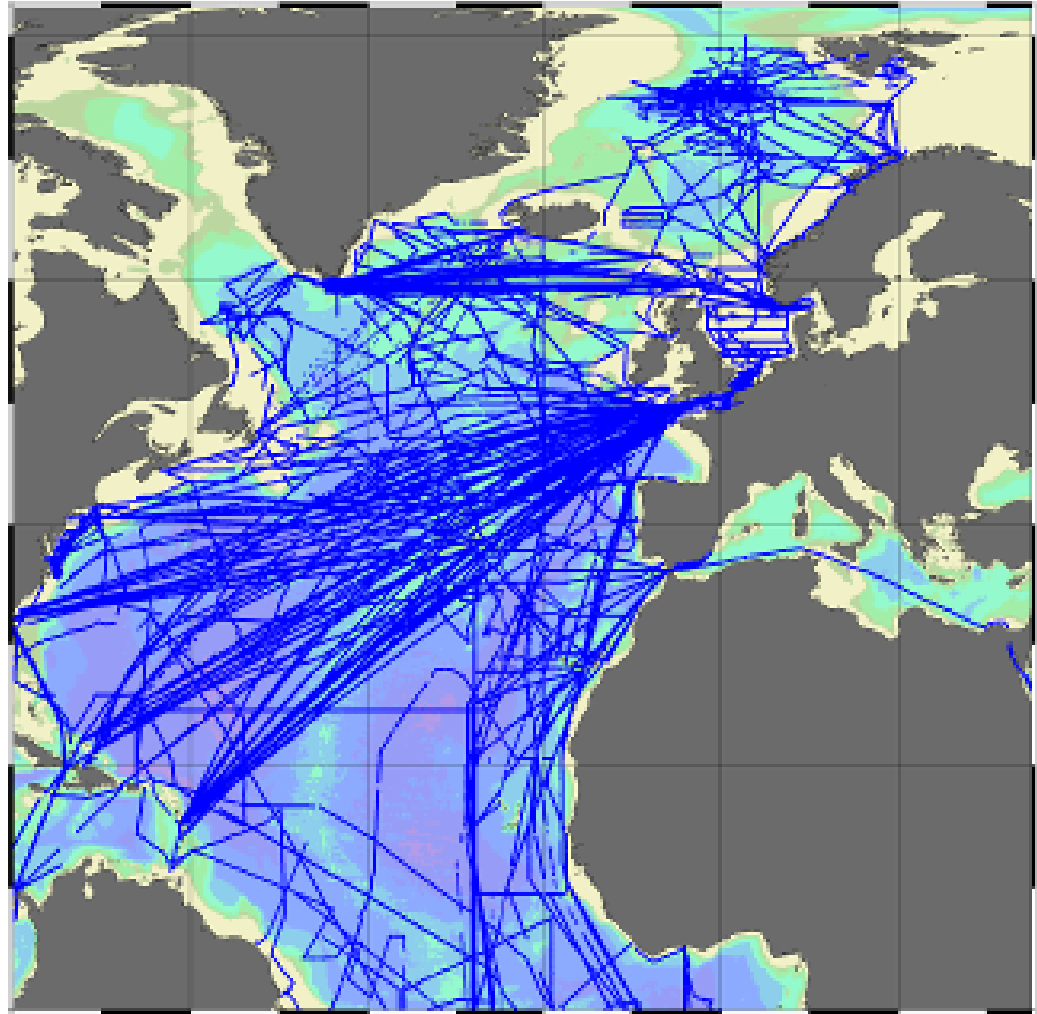
Mean seasonal cycle has been removed from each year



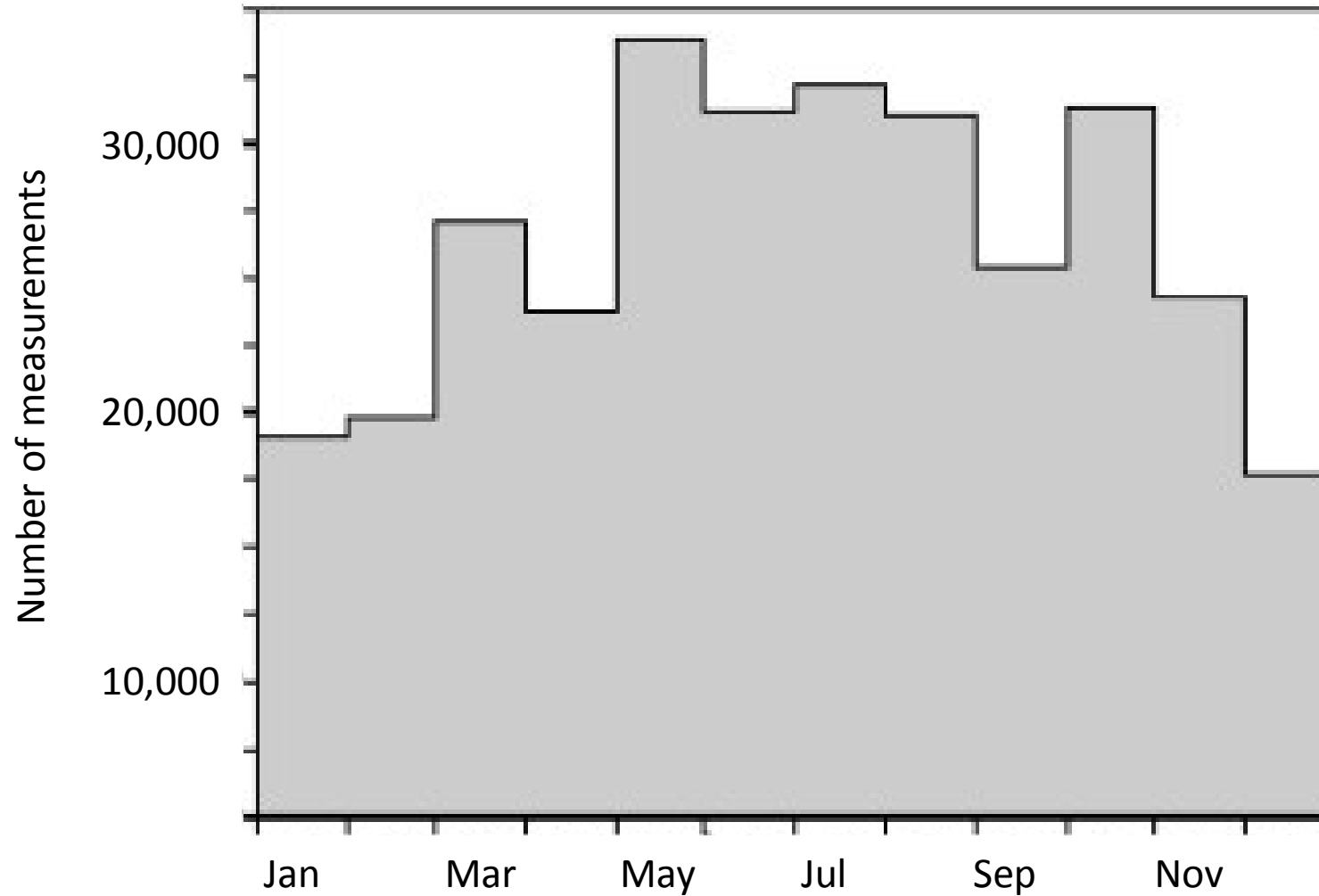
Schuster and Landschützer (2011) in preparation

SOCAT

Surface Ocean CO₂ ATLAS

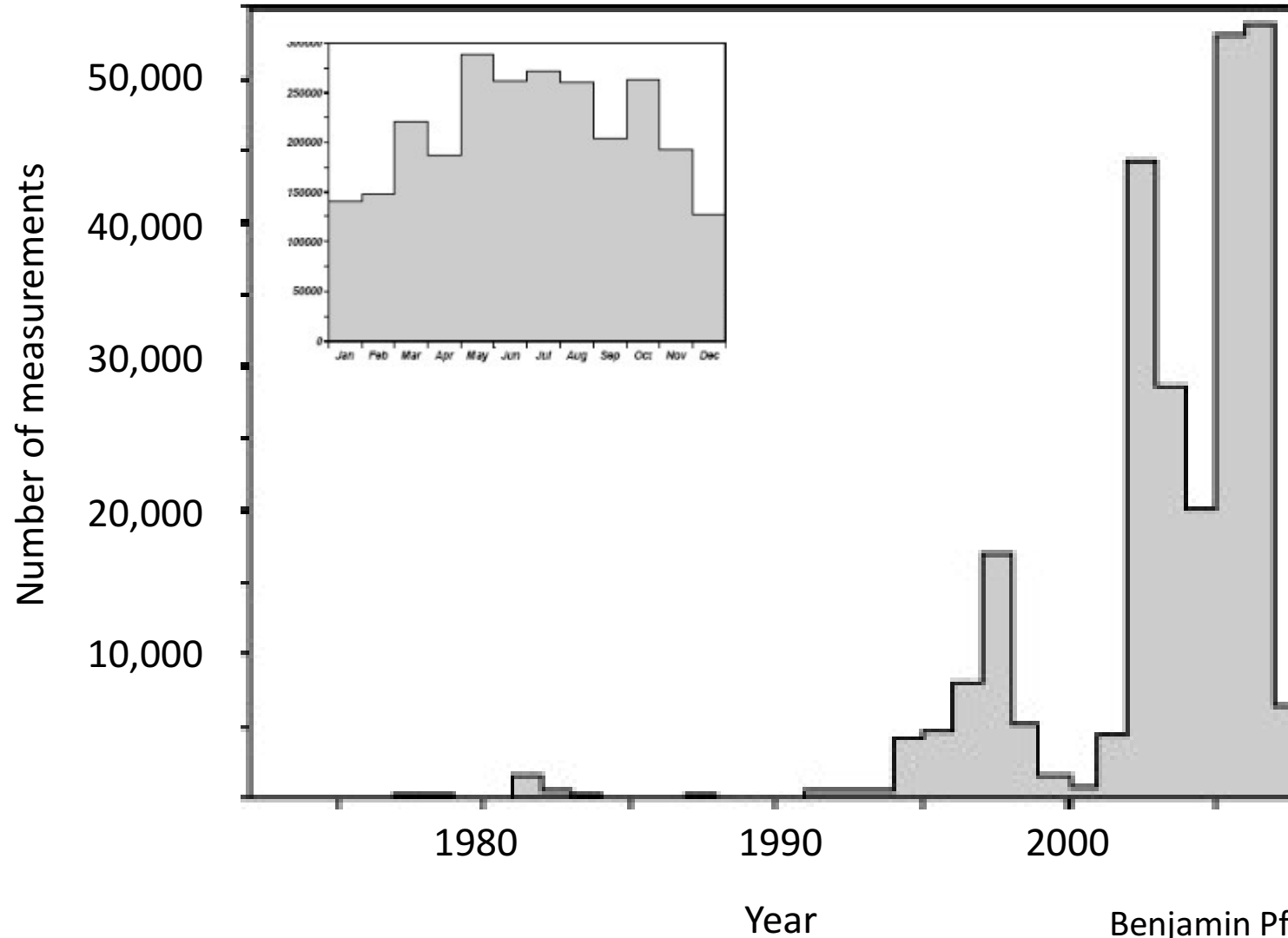


SOCAT Temporal coverage of measurements



Benjamin Pfeil, CarboChange

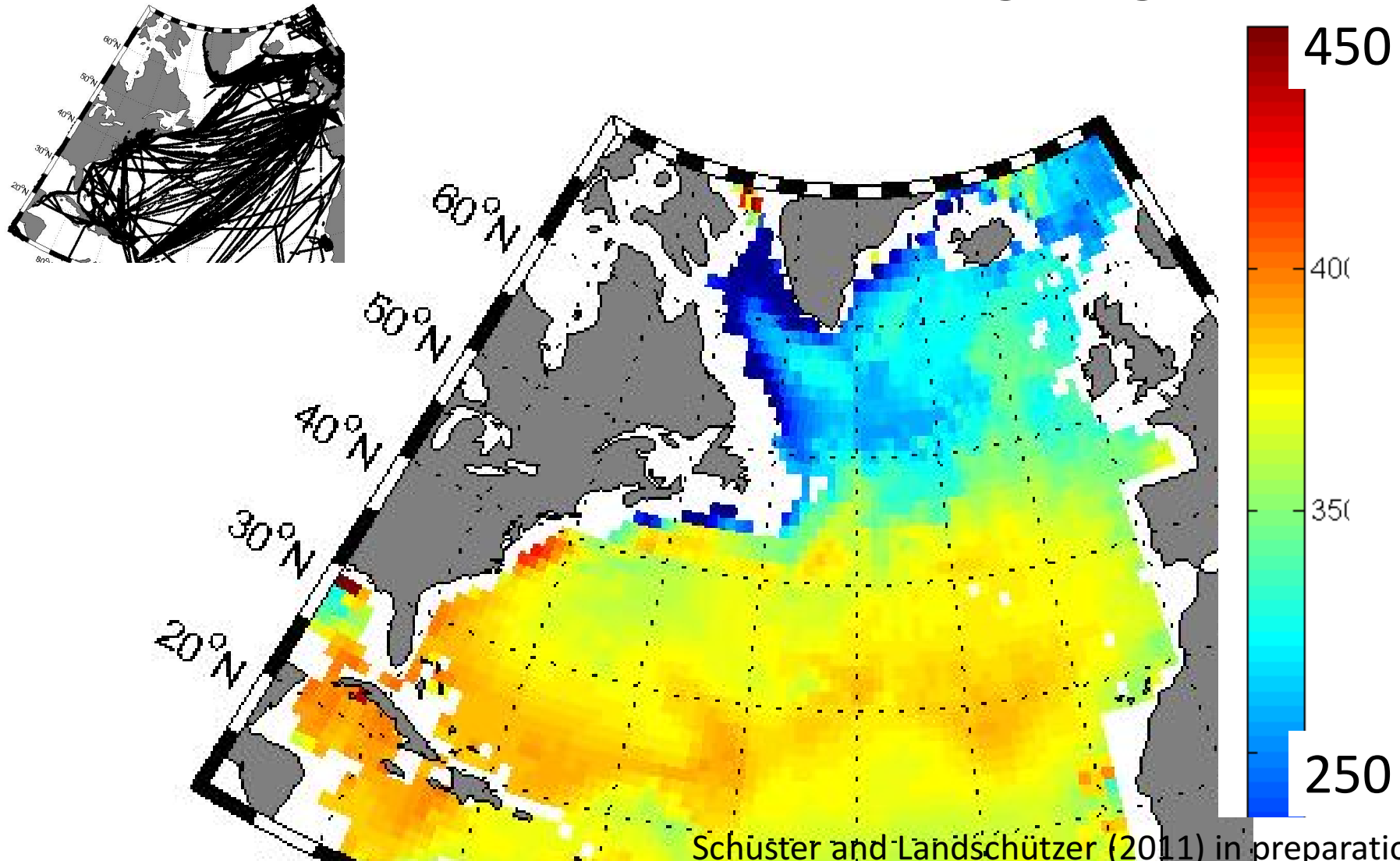
SOCAT Temporal coverage of measurements



Benjamin Pfeil, CarboChange

Surface fCO₂ maps [μatm]

Neural network (NN) created for e.g. August 2007



The CARBOOCEAN team and more:



- Truls Johannesen, Are Olsen, Abdiraman Omar



- Arne Körtzinger, Tobias Steinhoff, Doug Wallace



- Ute Schuster, Andy Watson, Dorothee Bakker, Maciej Telszewski



- Jon Olafsson



- Antoine Corbière, Nicolas Metzl, Nathalie Lefèvre, Aymeric Chazottes, Cyril Moulin



- Aida Ríos, Fiz Pérez, Tony Padin
- Melchor González-Dávila, Magdalena Santana-Casiano



- Nick Bates



- Heike Lüger, Rik Wanninkhof, Dennis Pierrot, Robert Castle, Betty Huss, Kevin Sullivan

...and many others



The players:



The shipping companies

and captains,
officers, and crew



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